

## REMARKS

The Examiner objected to informalities in the claims. The claims are amended herein to change "said first patient" to "the first patient." In Claim 8 the phrases beginning with "such as" have been eliminated.

Claims 1 – 4 and 7 – 13 were rejected under 35 USC 103 for obviousness over Kang 2003/0139652 in view of Miller 6,611,630. Claim 5 was rejected for obviousness over Kang in view of Miller 630 and Gupta 5,848,121. Claim 6 was rejected for obviousness over Kang in view of Miller 630 and Miller 6,553,152.

Herein non-elected claims 14 – 20 were cancelled without prejudice. Applicant reserves the right to file further applications based on these claims.

Claim 1 was amended to include the substance of original claim 7, which is cancelled without prejudice. Thus, the pain centroid of claim 7 is included in the steps of claim 1 as discussed more fully hereinafter. Determination of pain shape (step f) has been removed from claim 1 and inserted into claim 3. Claim 3 was also amended to provide quicker comprehension of the claim 1/3 inter-relationships. The amendments to claims 1 and 3 are based upon the original claims 1, 3 and the substance of claim 7. Accordingly, amendment of claims 1 and 3 introduces no new matter.

Claims 4 and 12 have been made dependent upon claim 3 to provide consistency based upon the amendments to claim 3. Claims 21–24 have been added. These are repetitions of claims 5, 6, 8, and 9, respectively, but with new dependency. New matter is not added.

The rejection of independent claim 1, as amended, under 35 USC 103 for obviousness in view of the cited prior art is respectfully traversed.

Kang uses distance measurements to aid in comparing pain patterns. (para 0045). Relying on this statement the Patent Office holds that "it would be obvious to one with

ordinary skill in the art ..... to calculate a centroid or meta-centroid based on the location of the outline of the pain shape....” etc.

However the distance measurements in Kang are entirely different from the centroid measurements considered in the present invention. Kang is measuring actual distances between two pain images. One image is derived from inputs of patients and the other image is derived from database sources related to a particular known pain-generating ailment. Kang initially overlays the patient and database images and then determines whether the degree of overlay of the two pain patterns is at least 10%. He also measures the distance between points on the patient’s pain pattern and (nearest) points on the database pain pattern, and uses these distances in a complex equation giving Hausdorff distance.

The 10% overlap and the Hausdorff distance measures in Kang are measures of the similarity between two images. In contrast, the centroid determined in the present invention is a location measure for a single image.

The centroid is analogous to the center of mass or center of gravity of an object. The centroid concept is extremely useful by reducing many data points to a single point that may be acted upon to produce the same result as achieved when acting simultaneously on all of the points separately. Thus in the present invention a pain shape comprising many points of pain data is converted to a single point, called the centroid, that represents all of the data of the pain shape. (A meta-centroid is the single point center of a pattern of centroids and thus represents the data of a plurality of pain shapes.)

Nowhere in Kang has there been found mention of a centroid, nor in the other cited prior art. One skilled in the art would not find motivation in perusing Kang to calculate a centroid.

It is respectfully submitted that the centroid of pain, as applied in the present invention, is an original concept of the present inventor. It is respectfully believed that the cited prior art does not disclose, suggest, or motivate the use of a centroid concept in simplifying use of pain data. Accordingly it is respectfully believed that claim 1, as amended to include the centroid

concept, is distinguished and not obvious in view of the cited art. Claim 1 is believed to be allowable as well as all remaining claims, which depend directly or indirectly from claim 1.

An earnest effort has been made to be fully responsive to the Examiner's objections. As stated, it is respectfully believed that claim 1 is distinguished and not obvious over the prior art and in condition for allowance, as well as all remaining claims which are dependent directly or indirectly from claim 1. However, should the Examiner consider the claims not to be in condition for allowance, it is respectfully requested that he telephone the undersigned attorney at the number listed below before issuing a further Office Action.

Respectfully submitted,

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